

**REMARKS**

In the Office Action, the Examiner rejected claims 46-90 and objected to claim 77. By the present Response, Applicant has amended claim 77 to correct a typographical error. Upon entry of the amendments, claims 46-90 remain pending in the present application. In view of the foregoing amendments and the following remarks, Applicant respectfully requests reconsideration and allowance of all pending claims.

**Claim Objection**

In the Office Action, the Examiner objected to claim 77. As discussed above, Applicant has amended claim 77 by this Response, and, as such, Applicant respectfully asserts that the Examiner's objection is now moot. With the foregoing in mind, Applicant respectfully requests withdrawal of the Examiner's objection to claim 77.

**Rejections Under 35 U.S.C. § 112, second paragraph**

In the Office Action, the Examiner rejected claims 64 and 80 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner stated as follows:

With respect to claim 64, the parent claim 63 recites sensing a *non-temperature* parameter. Claim 64 recites that the parameter indicates temperature, which requires that "the parameter" of claim 63 is in fact a temperature parameter. Therefore, claim 64 does not include all the limitations of claim 63 from which it depends.

With respect to claim 80, the parent claim 77 recites a sensor for obtaining a *non-temperature* operating parameter. Claim 80 recites that the at least one sensor comprises a temperature sensor, which inherently requires that "the sensor" sense a temperature operating parameter. Therefore, claim 80 does not include all of the limitations of claim 77 from which it depends.

Respectfully, Applicant disagrees with the Examiner's assertions regarding claims 64 and 80 and, as such, traverses the rejections.

Independent claim 63 recites “sensing *at least one* parameter *including* a non-temperature operating parameter,” and its dependent claim 64 recites “wherein sensing the at least one parameter comprises obtaining an indicator of at least one of existing operating temperature, existing operating load, existing operating voltage, and existing operating frequency.” (Emphasis added.) Focusing on claim 63, Applicant respectfully notes that this claim recites “sensing *at least one parameter.*” (Emphasis added.) Accordingly, independent claim 63 *does not* recite a limitation requiring the sensing of only non-temperature operating parameters. Rather, claim 63 merely recites “*at least one parameter including* a non-temperature operating parameter.” (Emphasis added.) Thus, by way of example, the sensing of *more than one parameter* falls within the scope of claim 63. Accordingly, the recitation of 64: “wherein sensing the at least one parameter comprises obtaining an indicator of ...existing operating temperature” is not incongruous with the recitations of its parent claim 63, because the scope of claim 64 includes the sensing of a temperature parameter and the concurrent sensing of a non-temperature parameter, for instance.

Similarly, dependent claim 80 is not broader in scope than its parent claim 77. Independent claim 77 recites “*at least one* sensor configured to obtain an indicator of at least one non-temperature operating parameter of the integrated circuit,” and its dependent claim 80 recites “wherein the *at least one sensor comprises* a temperature sensor configured to obtain an indicator of operating temperature of the integrated circuit.” (Emphasis added.) Applicant respectfully asserts that scope of the recitation “at least one” is inclusive of systems including *more than one sensor*. Accordingly, the recitation of claim 80: “at least one sensor...configured to obtain an indicator of operating temperature,” is not broader in scope than its parent claim 77, as the scope of claim 80 includes a sensor for sensing temperature and a second sensor for sensing non-temperature parameters, for instance.

With the foregoing in mind, Applicant respectfully requests withdrawal of the Section 112 rejections of claim 64 and 80.

#### **Rejections Under 35 U.S.C. § 102**

In the Office Action, the Examiner rejected claims 63, 64, 66, 67, 77-80, 82-87, 89, and 90 under 35 U.S.C. § 102(e) as anticipated by the Bausch et al. reference (U.S. Patent No.

6,304,824 B1). Applicant respectfully traverses the rejection, as the Bausch et al. reference fails to disclose all of the features recited in the instant claims.

Respectfully, Applicant reminds the Examiner that anticipation under Section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under Section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). The prior art reference also must show the *identical* invention “in as complete detail as contained in the . . . claim” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989) (emphasis added). Accordingly, Applicant needs only point to a single element not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter.

Furthermore, if the Examiner relies on a theory of inherency, the extrinsic evidence must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *See In re Robertson*, 49 U.S.P.Q.2d 1949 (Fed. Cir. 1999). The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient. *See id.* In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art. *See Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

With the foregoing in mind, Applicant respectfully asserts that the Bausch et al. reference fails to anticipate the instant claims.

**Independent Claims 63, 77, and 86 and the Claims Depending Therefrom**

Independent claims 63, 77, and 86 each recites, in a general sense, a substantially constant operating frequency. Specifically, the above-listed claims recite as follows:

Claim 63: “analyzing an operational relationship between the at least one parameter, voltage, and frequency to determine a

target voltage that substantially minimizes power consumption and that simultaneously holds a substantially uniform operating frequency of the integrated circuit;”

Claim 77: “a controller coupled to the at least one sensor and the power supply, wherein the controller is configured to analyze an operational relationship between the at least one non-temperature operating parameter, an operating voltage, and an operating frequency to provide the power supply with a target voltage that substantially minimizes power consumption and that simultaneously maintains a substantially constant operating frequency of the integrated circuit;” and

Claim 86: “code disposed on the tangible medium, wherein the code is configured to analyze an operational relationship between at least one non-temperature operating parameter, an operating voltage, and an operating frequency to provide a power supply with a target voltage that substantially minimizes power consumption and that simultaneously maintains a substantially constant operating frequency of an integrated circuit.”

(Emphasis added.) Applicant respectfully asserts that the Bausch et al. reference fails to disclose these features.

The Bausch et al reference discloses system and method in which a parameter of an IC chip that is indicative of an effective channel mobility of the chip is monitored. *See* Bausch et al., col. 2, l. 66 to col. 3, ll. 5. Along with other parameters, the effective channel mobility defines the channel conductance of a semi-conductor. *See id.* at col. 3, ll. 2-4. Specifically, Bausch et al. state that individual channel currents are affected by temperature and power supply. *See id.* at 30-35. By monitoring temperature and controlling the power supply to the IC, the system and method of Bausch et al. provide individual channel currents that are maintained at a generally fixed level. *See id.* at col. 4, ll. 44-67.

Although the Bausch et al. reference discloses the maintenance of constant individual channel currents, the Bausch et al. reference does not disclose the “substantially constant operating frequency” recited in the instant claims. Specifically, Applicant disagrees with the Examiner’s assertion that “maintaining substantially constant channel current *is the same as* maintaining a substantially constant operating frequency.” *See* Final Office Action Mailed

April 27, 2004, p. 13 (emphasis added). Rather, the mere fact that a relationship exists between individual channel currents, effective channel mobility, and operating frequency does not support the conclusion that individual channel currents and operating frequency are synonymous. Indeed, operating frequency is not solely dependent upon individual channel currents, as suggested by the Examiner. For example, adjusting parameters to maintain individual channel currents at a constant level does not *necessarily* mean adjusting the same parameters in the same manner will maintain a constant operating frequency. Respectfully, Applicant reminds the Examiner that “[d]istilling an invention down to the ‘gist’ or ‘thrust’ of an invention disregards the requirement of analyzing the subject matter as a whole” and that to anticipate a claim a cited reference must disclose the claimed invention in *as much detail* as is recited by such claim. M.P.E.P. § 2142.02, p. 2100-121; *see Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989). Thus, Applicant respectfully asserts that the Bausch et al. reference fails to disclose all of the features recited in the instant claim.

Therefore, Applicant respectfully asserts that independent claim 63 and its respective dependent claims, independent claim 77 and its respective dependent claims, and claim 86 and its respective dependent claims are not anticipated by the Bausch et al. reference. With the foregoing in mind, Applicant respectfully requests reconsideration and allowance of the instant claims.

#### **Rejections Under 35 U.S.C. § 103(a)**

In the Office Action, the Examiner rejected claim 46-62, 65, 68-76, 81, 84, and 88 under Section 103 as obvious in view of various references. Applicant, however, respectfully traverses the rejections, as addressed in detail below.

First, the burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). To establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). Thus,

Examiner must provide *objective evidence*, rather than subjective belief and unknown authority, of the requisite motivation or suggestion to combine or modify the cited references. *In re Lee*, 61 U.S.P.Q.2d. 1430 (Fed. Cir. 2002).

Furthermore, it is improper to combine references where the references teach away from their combination. *In re Grasselli*, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983); M.P.E.P. § 2145. Moreover, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 123 U.S.P.Q. 349 (CCPA 1959); see M.P.E.P. § 2143.01. With the foregoing in mind, Applicant respectfully asserts that the instant claims are not obvious in view of the cited references taken alone or in combination.

#### **First Rejection Under 35 U.S.C. § 103**

In the Office Action, the Examiner rejected claims 46- 50, 52-59, 61, 62, 68-76, and 81 under 35 U.S.C. § 103 (a) as obvious in view of the Bausch et al. reference and the Alexander et al. reference (U.S. Patent No. 5,420,808). Applicant respectfully traverses the rejection, because the cited references, taken alone or in combination, fail to disclose all of the features recited in the instant claims, and because the Alexander et al. reference teaches away from combination with the Bausch et al. reference to reach the instant claims.

#### **Independent Claims 46, 56, and 68 and the Claims Depending Therefrom**

Independent claims 46, 56, and 68 each recites, in a general sense, a substantially constant operating frequency. Specifically, the above-listed claims recite as follows:

Claim 46: “analyzing the plurality of operating parameters to provide a target voltage that substantially minimizes power consumption and that simultaneously maintains a substantially constant operating frequency.”

Claim 56: “analyzing an operational relationship between the operating temperature, the operating parameter, an operating voltage, and an operating frequency to provide a target voltage that substantially reduces power consumption without substantially altering operating frequency of the integrated circuit,” and

Claim 68: “providing a control system configured to analyze an operational relationship between a sensed operating temperature, a sensed operating parameter, an operating voltage, and an operating frequency to provide a target voltage that substantially minimizes power consumption and that simultaneously *maintains a substantially constant operating frequency of the integrated circuit.*”

(Emphasis added.) Applicant respectfully asserts that the cited references, taken alone or in combination, fail to disclose all of these features.

As discussed above, the Bausch et al. reference fails to disclose the maintenance of a constant operating frequency, as recited in the instant claims. Again, although the Bausch et al. reference discloses a relationship between individual channel currents and operating frequency, this relationship does not necessarily lead to the conclusion that individual channel currents and operating frequency are “the same,” as asserted by the Examiner. See Final Office Action Mailed April 27, 2004, p. 13. For example, and as discussed above, manipulating parameters to maintain a constant individual channel current does not mean that manipulation of the same parameters in the same manner will maintain operating frequency at a constant level, as recited in the instant claims.

Furthermore, Applicant respectfully asserts that the Alexander et al. reference fails to obviate the deficiencies of the Bausch et al. reference. The Alexander et al. reference teaches that “power consumption is reduced by *reducing a frequency of clock signal transitions.*” See Alexander et al., col 3, ll. 42-49 (emphasis added). Thus, the Alexander et al. reference does not disclose the “constant operating frequency” recited in the instant claims. Rather, the Alexander et al. reference discloses a operating scheme, that varies operating frequency and, as such, that is antithetical to the instant claims.

Therefore, Applicant respectfully asserts that the cited references, taken alone or in combination, fail to disclose all of the features recited in the instant claims.

Additionally, assuming, *arguendo*, the cited references disclosed all of the recited features, the Alexander et al. reference teaches away from the instant claims and, as such, lacks

the motivation necessary for combination with the Bausch et al. reference to support a *prima facie* case of obviousness.

As discussed above, the Alexander et al. reference teaches that power consumption is effectuated by the reducing the *frequency of clock signal transitions*. See Alexander et al., col. 3, ll. 42-55. Indeed, a principle of operation of the Alexander et al. reference is the reduction of in the frequency of clock signal transitions. Accordingly, the device of the Alexander et al. reference does not operate at a *constant* frequency, as recited in the instant claims. Rather, the device of Alexander et al. operates in a manner antithetical to the instant claims. Thus, the Alexander et al. reference does not support a *prima facie* case of obviousness against the instant claims, as its principle of operation is antithetical to the subject matter of the instant claims.

With the foregoing in mind, Applicant respectfully asserts that the instant claims are not obvious in view of the Bausch et al. and Alexander et al. references, taken alone or in combination. Therefore, Applicants respectfully request reconsideration and allowance of independent claims 46, 56, and 68 and their respective dependent claims.

#### **Dependent Claim 81**

Dependent claim 81 depends from independent claim 77, which recites a system that “maintains a substantially constant operating frequency.” As discussed above, the Alexander et al. and Bausch et al. references, taken alone or in combination, fail to disclose these features. Moreover, as also discussed above, the Alexander et al. reference teaches away from the subject matter of instant claims and, as such, fails to support a *prima facie* case of obviousness. Therefore, Applicant respectfully asserts that dependent claim 81 is allowable because of its dependency on an allowable base claim and by virtue of the additional features recited therein. With the foregoing in mind, Applicant respectfully requests reconsideration and allowance of dependent claim 81.

#### **Second Rejection Under 35 U.S.C. § 103(a)**

In the Office Action, the Examiner rejected dependent claims 51, 60, and 73 under 35 U.S.C. § 103(a) as obvious in view of the Bausch et al., Alexander et al., and Ginzl et al. (U.S. Patent No. 5,347,260) references. Applicant respectfully traverses the rejection.



The above-listed dependant claims depend respectively from allowable base claims, which are discussed above. Moreover, Applicant respectfully asserts that the Ginzel et al. reference fails to obviate the deficiencies of the Bausch et al. and Alexander et al. references, as discussed above. Therefore, Applicant respectfully asserts that the instant claims are patentable over the cited references, taken alone or in combination, not only for their respective dependencies on allowable base claims but also by virtue of the additional features recited therein. With the foregoing in mind, Applicant respectfully requests reconsideration and allowance of the instant claims.

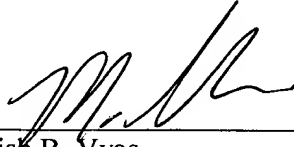
**Third Rejection Under 35 U.S.C. § 103(a)**

In the Office Action, the Examiner rejected dependent claims 65, 84, and 88 under 35 U.S.C. § 103(a) as obvious in view of the Bausch et al. reference and the Ginzel et al. reference. However, as discussed above, the Baush et al. reference fails to disclose a device or method having a substantially constant operating frequency, as recited in the instant claims. Moreover, the Ginzel et al. reference fails to obviate the deficiencies of the Bausch et al. reference. Therefore, Applicant respectfully asserts that the instant claims are patentable over the cited references due to their respective dependencies on an allowable base claims and, also, by virtue of the additional features recited therein. With the foregoing in mind, Applicant respectfully requests reconsideration and allowance of the instant dependent claims.

**Conclusion**

Applicant respectfully submits that all pending claims should be in condition for allowance. However, if the Examiner believes certain amendments are necessary to clarify the present claims or if the Examiner wishes to resolve any other issues by way of a telephone conference, Applicant kindly invites the Examiner to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,



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